Australian Energy Market Commission

AEMC
Australian Energy Market Commission

REVIEW

Final report

Review of the Wholesale Demand Response Mechanism

23 October 2025

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About the AEMC

The AEMC reports to the energy ministers. We have two functions. We make and amend the national electricity, gas and energy retail rules and conduct independent reviews for the energy ministers.

Acknowledgement of Country

The AEMC acknowledges and shows respect for the traditional custodians of the many different lands across Australia on which we all live and work. We pay respect to all Elders past and present and the continuing connection of Aboriginal and Torres Strait Islander peoples to Country. The AEMC office is located on the land traditionally owned by the Gadigal people of the Eora nation.

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Summary

1 The Australian Energy Market Commission (AEMC or Commission) has reviewed the role and performance of the wholesale demand response mechanism (WDRM). We have made two recommendations: that the WDRM should continue operating; and that the *Expanding eligibility under the WDRM* rule change request be initiated.[1] These recommendations are consistent with the draft report.

2 The Commission maintains its commitment to strengthening demand-side participation in the national electricity market (NEM). The recent *Integrating price-responsive resources into the NEM* (IPRR) and *Unlocking CER benefits through flexible trading* (CER benefits) rules have helped to progress this.[2]

3 While the voluntarily scheduled resources (VSR) framework, introduced through IPRR, is a key vehicle to facilitate broad demand-side participation, the WDRM can provide important additional benefits alongside this. There are also opportunities for greater participation in the WDRM, increasing the benefits it delivers to the operation of the NEM.

4 The AEMC is required to review the WDRM under Chapter 3 of the National Electricity Rules (NER), and in doing so has considered the role of the WDRM in enabling demand-side participation and its performance to date.

5 The AEMC currently anticipates initiating the *Expanding eligibility under the WDRM* rule change in 2026. This process will enable a full consideration of the benefits and costs of allowing sites with multiple connection points to participate in the WDRM.

The WDRM continues to play a useful role in the NEM

6 The WDRM was established on 11 June 2020 and commenced on 24 October 2021. The WDRM allows demand response service providers (DRSP) to offer demand response into the NEM, where it can be dispatched and paid for in the same way as generators.

7 This is currently the only market mechanism in the NEM wholesale market that facilitates demand response, that is, payment for reducing load. It is also the only mechanism that allows non-financially responsible market participants to participate in the electricity market.

8 These features enable some electricity users to have their demand response participation effectively incorporated into market outcomes, which benefits all electricity consumers. WDRM resources would be unlikely to participate in the NEM through dispatch mode as:

- They can't participate in the same way through dispatch mode. This is because dispatch mode uses actual consumption and generation rather than demand response relative to a baseline.
- Dispatch mode participation requires participants to follow dispatch instructions for every dispatch interval across the day. This is not compatible with WDRM, whose participants are only dispatched when providing a demand response, reducing participation complexity.

9 This means that if the WDRM was phased out existing WDR participants may not continue to participate in the wholesale market, with associated loss of dispatch efficiency benefits. Furthermore, as dispatch mode is due to commence in 2027, continuing the WDRM provides a pathway for resources to participate in the market.

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1 Enel X, *Expanding eligibility under the WDRM,* rule change request, 14 April 2022, available here.

2 AEMC, *Integrating price-responsive resources into the NEM*, rule determination, 19 December 2024. AEMC, *Unlocking CER benefits through flexible trading*, rule determination, 15 August 2024.

10 The Commission's analysis has also estimated that between October 2021 and June 2025, the WDRM has resulted in:[3]

- $5.32 million ($1.42 million per year) of dispatch efficiency benefits
- $42,757 emissions reduction benefits.

11 These benefits show that the WDRM is providing efficiency benefits greater than its operational costs of $350,000 - $500,000 per year. The WDRM has also contributed to downward pressure on wholesale prices, with average price savings of $27.83/MWh during WDR dispatch. While there are costs associated with operating the mechanism, we have assessed that these do not outweigh the benefits and have observed that there would be costs associated with dismantling it.

12 The Commission's recommendation that the WDRM continue, provides certainty for participants and recognises that the demand side has an important role to play in the NEM. As part of this, the WDRM plays a role in facilitating wholesale market participation from a subset of large loads. For instance, data centres may be suited to participate in the WDRM, and their prospective growth in Australia provides an opportunity for their participation in the WDRM to grow. Given that the WDRM provides net operational benefits, retaining it provides a pathway for these resources to participate in the market.

13 Based on the Commission's recommendation that the WDRM should continue, we also recommend that the pending rule change request seeking to allow sites with multiple connection points to participate in the WDRM be initiated. If made, the proposed rules from this request have the potential to immediately allow new participation and may not require significant changes to the WDRM design. Progressing this request through the rule change process will determine the materiality of these benefits and compare them against the potential costs.

14 The consultation paper and stakeholder submissions identified several potential changes to the WDRM's design that could increase participation in and the effectiveness of the WDRM. The Commission recommends no further work be progressed to investigate these additional changes to the design of the WDRM at this time. In making this recommendation, we considered stakeholder views and our own analysis, and consider that the complexity and uncertain benefits of these changes do not warrant further investigation.

Recent market reforms will boost demand-side participation

15 Demand-side participation is an umbrella term for the actions a consumer can take regarding their energy consumption by responding to a wide range of incentives and events occurring in the market.

16 Introducing the WDRM in 2020 was a move towards improving demand-side participation in the market by involving the demand side in price setting during high-priced intervals. Since the WDRM final rule, the Commission has continued to progress this through the *Unlocking CER benefits through flexible trading* (CER benefits) and *Integrating price-responsive resources into the NEM* (IPRR) rule changes:

- The CER benefits rule enables energy service providers for small and large customers to separately manage 'flexible' CER from 'passive' loads by establishing secondary settlement points in the energy market. Market participants will also be able to use in-built measurement capability in technology such as electric vehicle chargers and household batteries, removing the need to install a separate meter to the device.

3 These results are greater than calculated for the draft report. See section 2.1.2 for further information.

- IPRR introduced the voluntarily scheduled resource (VSR) nomination framework that allows currently unscheduled price responsive resources to be scheduled and dispatchable in the NEM, in aggregations or individually. This is informally referred to as 'dispatch mode'. It allows virtual power plants (VPP), community batteries, flexible large loads and other price-responsive small resources to compete with large-scale generators and storage in the wholesale market.

17 Through the combination of these two reforms, participants can separate flexible and inflexible resources behind a connection point and participate in dispatch mode with the flexible or controllable resources. As a result, these two reforms provide a flexible and robust method for demand-side participation in the NEM dispatch process for many electricity users.

18 These two rule changes allow for the participation of the rapidly growing volume of CER in the wholesale market, should they choose to participate and have the required technical capability. These arrangements will be increasingly important following the introduction of the Australian Government's Cheaper Home Batteries Program, which has brought in over 50,000 installations providing over 900 MWh of energy storage.[4]

19 While WDRM is playing a useful role in engaging the demand side, the biggest benefits to the NEM and ultimately electricity consumers will occur through participation of many types of resources through these reforms.

4 As announced by the Hon Chris Bowen MP on 6 September 2025, see here.
The number of installations has now risen to 90,000. Chris Bowen, 'Thats a lot of batteries.', LinkedIn post, 17 October 2025, accessed 20 October 2025.

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1 The Commission's recommendations

The Commission has made two recommendations: that the wholesale demand response mechanism (WDRM) should continue operating; and that the *Expanding eligibility under the WDRM* rule change request be initiated. These recommendations are consistent with our draft report.

This chapter outlines:

- an overview of the WDRM
- how our recommendations support demand-side participation in the NEM
- the context for the review.

1.1 The WDRM allows demand response to be offered into the NEM

The WDRM allows demand response service providers (DRSPs) to offer demand response into the NEM, where it is dispatched and paid like generators.

DRSPs may apply to the Australian Energy Market Operator (AEMO) to classify one or aggregate multiple qualifying loads as a wholesale demand response unit (WDRU). A key requirement in this process is that the qualifying load meets an approved baseline methodology.[5] This baseline estimates the consumption that would have occurred for the load had it not provided a demand response. The baseline measures the quantity of demand response delivered (and paid for), as the difference between the baseline and actual levels of consumption.

DRSPs bid in their willingness to reduce demand for each WDRU at certain price points, following the same bidding process as other generators. When dispatched, the DRSP must ensure that the relevant WDRU reduces its load by the amount dispatched.

The settlement process for wholesale demand response (WDR) dispatch is managed through AEMO systems. From the customer perspective, where WDRM is dispatched:

- the customer's retailer bills them for their actual consumption
- AEMO bills the customer's retailer for their baseline level of consumption
- the DRSP is paid the spot price for the quantity of wholesale demand response provided
- the DRSP pays the retailer the quantity of demand response provided at the wholesale demand response reimbursement rate (WDRRR).

See chapter 2 of the consultation paper for detailed information on the operation of the WDRM.

1.2 The recommendations support demand-side participation in the NEM

The Commission's recommendation to retain the WDRM recognises that the demand-side has an important role to play in the NEM.

The WDRM is the only market mechanism in the NEM wholesale market that facilitates demand response, that is, payment for reducing load. It is also the only mechanism that allows non financially responsible market participants to participate in the energy market. These features benefit some electricity users and enable their demand response participation to be effectively incorporated into market outcomes, which benefits all electricity consumers.

The Commission's recent rule determinations on *Unlocking CER benefits through flexible trading* (CER benefits) and *Integrating price-responsive resources into the NEM* (IPRR) provide flexible and

5 Approved baseline methodologies are defined in the baseline methodology register, available here.

enduring pathways for electricity users with portfolios of resources to participate in the NEM. The combination of these two reforms are the key vehicle to facilitate demand-side participation in the NEM.

1.2.1 Two-sided market arrangements are the key vehicle to facilitate demand-side participation

Two-sided market arrangements, which integrate a greater volume of resources into the price-setting process, are the key vehicle to facilitating broad demand-side participation in the NEM.

A two-sided market is characterised by the active participation of the supply and demand-side in dispatch and price setting. Introducing the WDRM in 2020 was a move towards a two-sided market by involving the demand side in price setting during high-priced intervals. Since the WDRM final rule, the Commission has continued to progress two-sided market arrangements for the NEM through the CER benefits and IPRR rule changes:[6]

- The CER benefits final rule enables energy service providers for small and large customers will be able to separate and manage 'flexible' CER from 'passive' loads by establishing secondary settlement points in the energy market. Market participants will also be able to use in-built measurement capability in technology such as electric vehicle chargers and household batteries, removing the need to install a separate meter to the device.
- IPRR introduced the voluntarily scheduled resource (VSR) nomination framework that allows currently unscheduled price responsive resources to be scheduled and dispatchable in the NEM, in aggregations or individually. This is informally referred to as ' dispatch mode'. It allows virtual power plants (VPP), community batteries, flexible large loads and other price-responsive small resources to compete with large-scale generators and storage in the wholesale market.

Through the combination of these two reforms, participants can separate flexible and inflexible resources behind a connection point and nominate only the flexible or controllable resources as a VSR. As a result, these two reforms provide a flexible and robust method for demand-side participation in the NEM dispatch process for many electricity users.

In establishing the WDRM, the Commission stated that if a move to a two-sided market were to occur in the future, then that reform should replace the wholesale demand response mechanism. However, as noted above, the WDRM is currently engaging the demand-side and may continue to provide this for a select group of users into the future. This niche role contributes to the total demand-side engagement in the NEM alongside the mechanisms introduced more recently.

In response to the draft report, stakeholders suggested that the Commission clearly outline the differences between the VSR framework and the WDRM.[7] The Commission's response to this feedback is expanded in section 1.2.2 below.

1.2.2 Existing WDR participants may not participate through the VSR framework

As outlined above, the WDRM is the only market mechanism in the NEM wholesale market that facilitates demand response. This design may better suit participation from a subset of large loads than the VSR framework, as outlined in Table 1.1 below:

6 See section 1.2 of the consultation paper for more information.
7 Submissions to the draft report; EUAA, p. 2. ECA, p. 3.

Table 1.1: Comparison of VSR and the WDRM

Area	Voluntarily scheduled resources (VSR)	Wholesale Demand Response Unit (WDRU)
Participant registration	Only the financially responsible market participant for the connection point (or secondary settlement point) can nominate a VSR.	Demand response service providers, which don't have to be the FRMP for the connection point, can register loads as a WDRU.
Unit registration	Any connection point that meets the technical requirements to be dispatched can be registered as a VSR.	Only large customers at a common connection point that can meet one of the approved baseline methodologies can be registered
Operation	VSRs are bid in and dispatched during all intervals for the actual level of consumption and generation they wish to achieve.	WDRUs bid in reductions in load relative to their baseline at certain prices and are only dispatched when this bid is below the spot price.
Settlement	VSRs are settled based on their actual generation or consumption at the spot price.	WDRUs are settled based on their demand response delivered at the spot price.
Alignment with pricing signals	VSRs bid in their willingness to consume or produce at relevant price points.	WDRUs bid in their willingness to avoid consumption at certain price points.

Source: AEMC

Due to these differences, existing WDR participants may face difficulties or a lack of incentives to participate as a VSR, for instance:

- The resources participating in WDRM can not participate through IPRR in the same way. This is because dispatch mode (introduced through IPRR) uses actual consumption and generation rather than demand response relative to a baseline.
- Dispatch mode participation requires participants to follow dispatch instructions for every interval across the day. This is not compatible with WDRM, whose participants are only dispatched when providing a demand response, reducing participation complexity.

Because of this, if the WDRM were phased out, existing WDRM resources would be unlikely to participate in the NEM through alternative mechanisms. Furthermore, as dispatch mode is due to commence in 2027, continuing the WDRM provides a pathway for resources to participate in the market.

In making our recommendations, we consider that the WDRM plays an important role in facilitating a pathway for wholesale market participation from a subset of large loads. Given that the WDRM provides net operational benefits, there are few reasons for its removal.

The Commission's second recommendation is that the *Expanding eligibility under the WDRM* rule change request be initiated. This recommendation has been made because if the WDRM is to be retained, then changes to improve or increase participation in the mechanism should be considered. The pending rule change process represents an opportunity to increase participation in the WDRM, and this request will be initiated after this review has been completed.

1.3 This review's process and scope

This section:

- outlines the reasons for this review into the WDRM
- acknowledges the role of stakeholder views in forming the recommendations
- notes the interaction of the NEM review.

1.3.1 The Commission is required to review the WDRM

The WDRM was established through a rule made on 11 June 2020 and commenced operation in the national electricity market (NEM) on 24 October 2021. In making the rule, the Commission committed to reviewing the WDRM after a period of operation.

Through this review, the Commission has considered the costs, benefits and effectiveness of the wholesale demand response mechanism (WDRM), having regard to:[8]

1. the impact of the arrangements on the spot price
2. the accuracy of baseline methodologies
3. market and technological development
4. any other matters relating to wholesale demand response that the AEMC considers relevant.

In doing so, the key question has been to determine whether the WDRM should be changed, remain as is, or be phased out, considering:

- whether recent regulatory and market developments have promoted a two-sided market and whether this has reduced or removed the need for the WDRM
- stakeholder feedback on participating in the WDRM and whether changes could increase participation in and the effectiveness of the WDRM.

1.3.2 Stakeholder feedback and our analysis have shaped our recommendations

Stakeholder feedback, provided through formal submissions and discussions with the project team has been critical to the development of the Commission's final recommendations. In response to the draft report most submissions agreed that the WDRM should continue, noting that it:[9]

- allows benefits to continue to be realised by consumers
- gives certainty for consumers and DRSPs to increase participation
- supports market access for a subset of large loads.

In contrast, CS Energy, ENGIE and Red Energy, maintained their views that the IPRR is a better solution and the limited benefits of the WDRM justify its phase out.[10]

In making our recommendations, the Commission has considered the feedback received from stakeholders (in submissions and in discussions) and our own analysis, which is explored throughout the rest of this report.

1.3.3 The Commission has considered the NEM review draft report

On 6 August 2025, the draft report for the National Electricity Market wholesale market settings review (NEM review) was published. The review is due to publish a final report by the end of 2025.

8 Clause 3.10.7 of the NER.

9 Submissions to the Draft Report; JEC, p. 2. VIOTAS, p. 2. Enel X, pp. 1-2. Climateworks, pp. 6-7. EEC, p. 1. ECA, p. 2. Shell, p. 1. EUAA, p. 1. Reposit, p. 1.

10 Submissions to the Draft Report, CS Energy, pp. 1-2. ENGIE, p. 1. Red Energy, pp. 1-2.

This draft report made two recommendations relevant for the WDRM as part of the broader theme of requiring resources to be visible or dispatchable:[11]

- Recommendation 2B: "Energy ministers should propose a rule change to the AEMC requiring that, by 2030, various forms of price-responsive resources should be visible or dispatchable in a relevant participant category, with this obligation falling on the relevant participant". As part of this recommendation, a working position was that large loads above a certain threshold, including all market customers, participating through the dispatch mode framework (in active or inactive mode), WDRM or scheduled load frameworks.
- Recommendation 2C: "Energy ministers should establish a structured support framework to encourage price-responsive resources to participate in the IPRR framework, WDRM or as scheduled loads".

Stakeholders also commented on the interactions between the two reviews, with submissions to the AEMC's draft report noting that:

- The NEM Review's proposed contracting reforms, including the derivative products under the Electricity Services Entry Mechanism, could create new opportunities for wholesale demand response to be packaged and traded.[12]
- The NEM review considers that "...each resource should be able to choose the most suitable pathway given its characteristics.". The only way to meet this is if households can also participate in the WDRM.[13]
- The NEM Wholesale Market Settings Review draft report notes that greater visibility of demand-responsive large loads is important for ensuring efficient system operations and lower costs for consumers. With the Commission's draft recommendation recognising this importance, this should enable the WDRM to continue to play a role in facilitating wholesale market participation from large loads.[14]
- The NEM review highlighted barriers to participation in the WDRM from complexity in establishing baselines, ongoing compliance and lack of awareness from Commercial and industrial users.[15]

The Commission's final recommendations align with the NEM review and promote resources being visible and dispatchable in the market. Specifically:

- Recommending the WDRM continue allows for resources to be visible and dispatchable in the market that may not otherwise participate through alternative mechanisms.
- Initiating the *Expanding eligibility under the WDRM* rule change process will enable us to consider whether more sites will be able to participate.

The Commission will continue to engage with the NEM review as the panel prepares its final report. The AEMC's submission to the NEM review draft report can be found here.

11 National Electricity Market wholesale market settings review, Draft Report, August 2025, pp. 94-101.
12 Climateworks, submission to the draft report, p. 7.
13 JEC, submission to the draft report p. 14.
14 AEMO, submission to the draft report, p. 3.
15 CS Energy, submission to the draft report, pp. 2-3.

2 The WDRM has a role in the NEM

The Commission has made recommendations that the WDRM should continue operating and that it will initiate the pending rule change to allow participation from sites with multiple connection points. These recommendations reflect the current benefits of the mechanism and its potential to continue to be utilised in the future.

This chapter outlines:

- our modelling showing that the WDRM is providing benefits greater than its operating costs
- that the WDRM has the potential to continue to grow in participation
- that participation from sites with multiple connection points should be investigated
- our reasoning for not progressing further work to consider small customer participation in the WDRM.

2.1 The WDRM is providing benefits

Our analysis has found that the WDRM's benefits outweigh its operating costs. This analysis is required under the NER for this review, and it is a key input in making our recommendations. Our analytical approach involved comparing the WDRM's dispatch efficiency benefits against its actual operating costs to date.

2.1.1 Submissions suggested further consideration of implementation costs

CS Energy and ENGIE considered that the AEMC has not properly considered the $14.8 million cost of implementing the WDRM in our analysis.[16] CS Energy outlined that the benefits seem insubstantial compared to these implementation costs, which did not consider DNSP costs and the estimated retailer costs are too conservative. ENGIE also stated that the past performance of the WDRM is fundamental to this review and that the Commission should consider the lower than expected participation in the WDRM to date.

Separately, Enel X commented that the benefits of the WDRM are only starting and will grow as their portfolio of WDR resources expands.[17]

2.1.2 Our analysis of the WDRM's benefits and costs

Our analysis estimates that the WDRM has resulted in $5.75 million in benefits to date, which is greater than its operational costs. This estimate is $1 million higher than the draft report, as the analysis was extended to June 2025, which captured 237 MWh of additional dispatch.

To estimate the benefits of the WDRM, we calculated the change in deadweight loss and emissions reduction benefits between the current market where WDR operates and a counterfactual scenario in which there was no WDR.[18] Our analysis estimated that between October 2021 and June 2025, the WDRM has resulted in:

- $5.32 million ($1.42 million per year) of dispatch efficiency benefits
- $42,757 in emissions reduction benefits.

16 Submissions to the draft report; CS Energy, p. 3. ENGIE, p. 2.
17 Enel X, submission to the draft report, p. 1.
18 See Appendix A of the draft report for further information.

Comparing these benefits against its operating costs of $350,000-$500,000 per year, the WDRM is providing benefits greater than its operating costs.[19] We acknowledge that this is a backward-looking estimate and may not be indicative of future benefits.

The WDRM has also resulted in lower wholesale prices, resulting in benefits of $265.6 million. While this is considered a wealth transfer from producers to consumers rather than an efficiency benefit, we note that consumers have nonetheless benefited from these price reductions. See section 4.1.1 for more information on the Commission's consideration of these benefits.

In making our recommendation that the WDRM continue, we have also considered the potential costs and complexity of removing the mechanism. Removing the WDRM would create costs for AEMO, retailers and DRSPs to remove systems and processes that facilitate the WDRM's operation. Transitional arrangements would also need to be created for the WDR capacity awarded through contractual arrangements. This could include the NSW LTESA contracts, NSW peak demand reduction scheme (PDRS) contracts awarded to WDRM, or any out-of-market contracts that may underpin WDR participation. The Commission has not sought to quantify these costs, given the net operational benefits of the WDRM.

Implementation costs of the WDRM

This review considers the future of the WDRM, and in doing so, we have considered the implementation costs as sunk. The draft report nonetheless noted these costs and sought feedback from stakeholders on the actual costs of implementing the WDRM to consider whether improvements in estimating implementation costs could be made for future reforms.

In the draft report, the Commission commented that the actual total (implementation and operational) costs to AEMO and assumed retailer and DNSP costs mean that the WDRM has come at a net cost.[20] It is in the context of this net cost that the Commission has not recommended further substantial changes to the WDRM. We have recommended that the Expanding eligibility under the WDRM rule change be initiated, as this request, if implemented, has the potential to immediately allow new participation and does not propose material changes to the WDRM design.

The Commission has taken steps to provide more rigorous impact analysis in recent rule changes, such as commissioning market modelling to estimate the size of the problem and the benefits through the IPRR rule change. This modelling was then tested with stakeholders in the draft determination and during public forums.[21]

2.1.3 Incorporating demand response in price setting is important for the market

Providing pathways for the demand-side to participate in the market is important for market as a whole, and the WDRM helps deliver this. In addition, the WDRM could potentially help to offer competition and drive retailers to offer demand response products.

Incorporating demand response in price setting is important for the market

Intelligent Energy Systems (IES) modelling for the IPRR rule change quantified the benefits of market participation from VPP resources as well as demand-side participation (DSP). In this work, 'DSP resources' refer to flexible demand responding to high prices, which is analogous to WDR participation.

19 AEMO, submission to the consultation paper, p. 3.

20 See section 2.1.6 of the draft report.

21 See sections 2.1.5 and 2.1.6 of the draft report for further information.

This modelling showed that the net benefits of DSP resources participating in the market is $189 million.[22] Whether the resources participate through IPRR or WDRM, these benefits would be realised, supporting the Commission's draft recommendation to retain the WDRM.

Academic research also highlights the benefits of demand-side participation in price setting. In systems with a high share of wind and solar resources, studies have suggested that an energy-only market will break down. This is because without fuel costs, the research suggests that there is nothing to set prices. Where short-term elasticity from flexible demand is included in price setting, these problems can be significantly reduced. [23]

The importance of having the demand-side incorporated into price setting was recently highlighted by the NEM review.[24]

Changing retailer offerings

The WDRM provides a pathway for third parties (that is, parties that are not the customer's retailer) to engage customer flexibility and offer this into the wholesale market. Where retailers engage with customers to utilise their flexibility as part of their retail contract, this would reduce or remove the ability of a DRSP to contract with that customer to provide WDR.

In response to the consultation paper, stakeholders commented that retailers are increasingly offering contracts with demand response components.[25]

The Commission welcomes retailers offering more demand response products, but acknowledges that the impact of the WDRM in driving these offers is uncertain. Nevertheless, the WDRM may have helped to improve competition and provide an alternative pathway for some customers to participate in the wholesale market.

2.2 The WDRM allows large customers to participate in the market

While the WDRM has had somewhat limited participation to date, it may still grow in participation over time and provide greater benefits. Noting this, the Commission considers that the WDRM should continue to be part of the NEM and provide opportunities to large customers. The Commission sees no reason to recommend the WDRM's phase-out.

The WDRM has opportunities to continue to grow

WDRM participation has increased 76 MW since the start of the review, with registered capacity now at 150 MW. The prospective increase in data centre load in Australia also provides opportunities for the WDRM to be further utilised.

The benefits modelling, outlined in section 2.1.2 above, shows that even with the current level of participation, the WDRM is providing benefits greater than its operational costs. If WDR participation increases, the operational benefits would be expected to increase as well.

A**lternative mechanisms may not be as accessible for WDRM participants**

Existing WDR participants are unlikely to participate through alternative mechanisms, such as the VSR framework. This is because the WDRM was specifically designed to facilitate demand response offered by third parties in the wholesale market. If the WDRM were phased out and

22 IES, *Benefit analysis of improved integration of unscheduled price-responsive resources into the NEM*, final report, 24 June 2024, p. 18.

23 Brown, Tom & Neumann, Fabian & Riepin, Iegor (2024) 'Price formation without fuel costs: the interaction of elastic demand with storage bidding', 10.48550/arXiv.2407.21409.

24 National Electricity Market wholesale market settings review, draft report, August 2025, pp. 79-81.

25 Submissions to the consultation paper, Origin, p.1. AEC, p.1-2. EnergyAustralia, p.2. AGL, p.2. Alinta Energy, p.4. Enel X, p.7. VIOTAS, p.3. ENGIE, p.2.

existing participants did not participate in the wholesale market through alternative mechanisms, then this would result in a net reduction in dispatch efficiencies.

Based on future opportunities for the WDRM and the limited ability for existing resources to participate in alternative mechanisms, coupled with the WDRM's net benefits, the Commission recommends that the WDRM continue to be part of the NEM.

2.2.1 Participation in the WDRM has opportunities to continue to grow

While the WDRM has had limited participation to date, there are opportunities for participation to continue to increase and provide greater benefits.

The WDRM has been in operation for over four years, during which time it has gained 150 MW of registered WDRUs and delivered 1,490 MWh of response. This participation is below the Commission's indicative modelling of 150 MW and 1,200 MWh of response each year in the 2020 final determination; however, it has been growing over time.

The WDRM is being utilised in the NSW LTESA contracts, with 95 MW of WDRM capacity awarded under this and due to be registered by December 2025.[26] Enel X also noted in response to the consultation paper that it has 100 MW of WDR capacity in AEMO's registration pipeline.[27]

Furthermore, additional capacity may be realised if sites with multiple connection points are able to participate, see section 2.3 for more information.

CS Energy highlighted that the growth in data centres and their feasibility to participate in demand response is uncertain.[28] CS Energy highlighted the lack of participation in the WDRM to date and questioned whether the prospective growth is significant enough to warrant the continuation of the mechanism.

The growth in data centres is prospective, however the demand for data centres is increasing. As outlined in the draft report, potential new data centre loads are at the connection enquiry or preapplication phase, and some projects propose to connect within the next two years.[29] AusNet alone has a total pipeline of more than 10 GW of new transmission-level data centre connections (including projects in early-stage development).[30]

The Commission has not relied on this prospective growth of data centres alone in deciding whether the WDRM should continue to operate. Rather, allowing the WDRM to continue provides an important participation path for these resources, should they choose to participate in the wholesale market, with data centres most likely suited to participating through the WDRM.[31]

2.2.2 Stakeholder views on the impact of new reforms on the WDRM

Stakeholders offered differing views on whether recent market reforms, such as secondary settlement points and the VSR framework, would adequately facilitate broad demand-side participation in the NEM to the degree that the WDRM may no longer be required.

CS Energy, ENGIE and Red Energy considered that the combination of the CER benefits and the IPRR rule changes has effectively completed the move to a two-sided market. These stakeholders highlighted that:

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26 AEMO Services, Media Release, NSW tender for firming capacity exceeds expectations, 22 November 2023, p. 3. available here.

27 Enel X, submission to the consultation paper, p. 7.

28 CS Energy, submission to the draft report, p. 2.

29 AEMC, Improving the NEM access standards - Package 2, Consultation paper, 8 May 2025, p. 17.

30 AusNet, Submission to Draft Electricity Demand Forecasting Methodology, 17 January 2025, p. 3. Available here.

31 See section 2.2.1 of the draft report for more information.

- It is increasingly difficult to see the WDRM playing a substantial role in the future alongside the recent reforms, particularly given its complexity.[32]
- Maintaining the WDRM alongside the newer mechanisms may ultimately impede the development of a more efficient two-sided market.[33]
- Existing demand responsive participants can obtain value by bidding into central dispatch through the VSR framework, only requiring minor operational adjustments to adapt to the new dispatch mode. Maintaining two demand-side schemes in the NEM would be inefficient.[34]

In contrast, some stakeholders considered that the WDRM can and should still play a role in facilitating demand-side participation in the NEM, outlining:

- The WDRM is the only model where the customer is effectively paid for reducing its demand, as opposed to lowering the costs of total spot price exposure through other mechanisms. The WDRM only requires bids for load reduction, rather than the entirety of the load under the VSR framework.[35]
- The combination of CER benefits and IPRR reforms is unlikely to encourage participation from a broad range of small users and diverse technologies or stimulate a competitive market for the expansion of these services.[36]
- The WDRM provides an important pathway for customers to participate, which the combination of CER benefits and IPRR rule changes does not replicate.[37] The existing contracts and customers participating in the WDRM are not exposed to spot prices, and phasing out the WDRM would limit their participation options to be via their retailer.[38]
- IPRR has a narrow application and is limited to services provided by retailers that don't require external baselining. Retailers have also anecdotally indicated that while they may participate in IPRR with VPPs, they are unlikely to do so with flexible demand. The absence of centralised baselining means IPRR is entirely unsuited to wholesale demand response dispatched by AEMO.[39]

2.2.3 WDRM participants may not use alternative mechanisms

The WDRM was specifically designed to facilitate demand response offered by third parties in the wholesale market. These factors mean that WDRM participants are unlikely to participate through alternative mechanisms.

The WDRM is the only wholesale market mechanism that facilitates demand response, that is, payment for reducing load. It is also the only mechanism that allows non financially responsible market participants to participate in the energy market. These factors mean that existing WDR participants may face difficulties or a lack of incentives to participate through the VSR framework, or other mechanisms as:

- WDR resources can't participate and be paid in the same manner through the VSR framework. This is because VSR participants are paid based on their actual consumption or generation rather than a demand response relative to a baseline.

32 CS Energy, submission to the draft report, p. 1.
33 ENGIE, submission to the draft report, p. 3.
34 Red Energy, submission to the draft report, p. 2.
35 Shell, submission to the draft report, pp. 1-2.
36 EEC, submission to the draft report, p. 1.
37 Submissions to the draft report, Enel X, p. 1. VIOTAS, p. 2. Climateworks, p. 6.
38 VIOTAS, submission to the draft report, p. 2.
39 JEC, submission to the draft report, p. 11.

- To nominate a VSR, you need to be the financially responsible market participant (FRMP) for the relevant participating national metering identifier (NMI). This would mean that for any existing WDR participants who would like to participate in dispatch mode, they would likely need to partner with a retailer to utilise the existing WDR resources.
- VSR participants need to be dispatched for any and all consumption or generation, compared to the WDRM's dispatch only during high-priced intervals.

The Commission acknowledges that there is not a strict technical limitation that would mean existing WDRUs could not participate under the VSR framework. As outlined in the IPRR final determination, demand response can be facilitated through the VSR framework.[40]

However, the reasons above make it unlikely that these resources would easily or voluntarily transfer to participate under the VSR framework.

If the WDRM were phased out, and existing resources did not participate through alternative mechanisms, this would result in a net reduction in demand-side resources participating in the market and their associated benefits. Further, as the VSR framework is due to commence in 2027, it is too early to cease operation of the WDRM. This is because there is no information about which resources will participate through the dispatch mode and how successful this will be.

2.2.4 WDRM's baseline approach is well-suited to predictable loads

The baselining approach used in the WDRM is well-suited to predictable loads, as these users inherently have less variability in their consumption. As CER uptake increases and loads become more active, participation from these customers in the wholesale market is likely best facilitated through dispatch mode, which does not rely on a baseline methodology to operate.

Baselines are critical to the operation of the WDRM as they determine the quantity of demand response offered into the market. If baselines are set too high, consumers will pay more than they need to. If they are too low, there would not be enough incentive to encourage demand response in the market. The consultation paper sought feedback on whether baselines are appropriate for a future with increasing levels of CER active in the NEM.

Stakeholders outlined mixed views on the suitability of the WDRM with increasing levels of CER, outlining that:

- As CER penetration grows, so too will load volatility, which will make it more difficult to predict baselines, ultimately making the WDRM less accurate and effective in facilitating demand-side services.[41]
- The reliance on arbitrary baselines to estimate consumption without demand response poses a challenge, as these baselines are notoriously difficult to forecast accurately as load is influenced by various factors, not solely energy market outcomes.[42]
- The Commission's view that customers with CER are best facilitated through the VSR framework misunderstands:[43]
  - a customer's CER participating, which would be a candidate to be a VSR
  - the customer's flexible load participating, which would be a candidate for WDRM (but as outlined by the Commission and on the advice of AEMO is unsuited to the VSR framework).

40 AEMC, *Integrating price-responsive resources into the NEM*, rule determination, 19 December 2024, p. i.
41 CS Energy, submission to the draft report, p. 3.
42 Red Energy, submission to the draft report, p. 2.
43 JEC, submission to the draft report, p. 8.

- Enabling the direct metering of flexible loads and subtractive metering to exclude variable CER sources like batteries and solar are practical, technically straightforward approaches to removing the "variability" of CER resources.[44]

JEC also considered that "predictability" is a more accurate characterisation of load suitability for baselining purposes than "stability", as load only needs to be reasonably predictable to be suited for demand response.[45]

The Commission maintains that, all else being equal, an increasing level of CER will make meeting a baseline harder for loads that want to participate in the WDRM. AEMO has progressed with enhancements to the available baselines to better account for sites with solar PV, with these expected to be available to WDR participants in the coming month.[46] These changes are expected to better allow sites with solar PV to participate. However, the variability associated with solar PV would impact the ability of those consumers to meet a baseline.

As a result, consumers with CER, including customer demand response, would be best facilitated in the wholesale market through the VSR framework. For large customers with stable, or predictable, consumption who want to provide demand response in the wholesale market, the WDRM plays an important role in facilitating this.

JEC's recommendations regarding the use of direct or subtractive metering could be considered through the *Expanding eligibility under the WDRM* rule change process. However, any consideration will be limited to its applicability for large customers, consistent with the recommendations in this review.

2.3 Participation at sites with multiple connection points should be investigated

The Commission's second recommendation is that the pending rule change request seeking to allow sites with multiple connection points to participate in the WDRM be initiated. Progressing this request should uncover if the proposal:

- has the possibility to unlock significant MW's of participation immediately
- can facilitate participation from new large loads that may connect
- does not require material changes to the existing WDRM dispatch, settlement or retailer billing systems.

This recommendation, which is the same as the draft recommendation, to initiate the pending rule change should not be interpreted as the Commission's endorsement of the proposal, but rather recognition that the proposal raises issues and a potential solution that should be explored through a rule change process.

2.3.1 Stakeholders supported investigating multiple connection points participating in the WDRM

Stakeholder submissions broadly supported the Commission's draft recommendation to initiate the *Expanding eligibility under the WDRM* rule change process.[47]. Stakeholders noted that:

44 JEC, submission to the draft report, p. 8.

45 JEC, submission to the draft report, p. 8.

46 AEMO, Enel X Baseline Methodology Proposal, Final decision report - Further Consultation items, July 2025, p 11. The new baseline methodologies were previously communicated to be available in September 2025. For further information on the availability of these baselines, please contact AEMO.

47 Submissions to the draft report; Shell Energy, p. 2. EEC, p. 1. Enel X, p. 2. VIOTAS, pp. 2-3. JEC, p. 2. Climateworks, p. 5.

- Making the proposed rule would unlock additional wholesale demand response from large customers with multiple connection points.[48]
- The rule change request estimated 300MW of flexible demand is currently restricted from WDRM participation. Subsequent committed developments and projected growth of data centre loads are likely to see this potential resource expand by hundreds of MW.[49]
- Making the proposed rule and removing the claimed barrier to WDRM participation is in the long-term interest of energy consumers and given the low capital cost involved, this will further support the achievement of the NEO.[50]

In contrast, ENGIE did not support expansions to the WDRM. It expressed concerns that progressing arrangements to grow the WDRM may result in the expansion of a mechanism without a proper participant base. ENGIE commented that without a robust understanding of the practical appetite and operational feasibility for data centres to realistically engage with the WDRM, there is a risk that the WDRM continues to not function as intended.[51]

2.3.2 Next steps to consider sites with multiple connection points

The Commission's recommendation is to initiate a rule change process to fully consider the costs and benefits of allowing sites with multiple connection points to participate in the WDRM. The rule change process is currently expected to be initiated in 2026. This recommendation does not advocate that the proposed rule change be made, only that the request should be fully assessed through a consultative process against the NEO.

Given the limited benefits of the WDRM, outlined in section 2.1.2, the Commission is hesitant to recommend changes that involve significant expenditure or complexity. Expanding the WDRM to sites with multiple connection points could unlock new participation while also allowing for future participation from new large loads, such as data centres. As currently understood, this option does not propose material changes to the dispatch or retailer billing systems, it minimises potential costs and complexities in its implementation.

The Commission acknowledges that this request is not without some degree of complexity. However, there is merit in fully assessing these complexities through a rule change process to determine their materiality and compare against the potential benefits.

In response to ENGIE's concerns, the Commission's decision to carry out a rule change process is not contingent on the growth and expected participation of data centres, see section 2.2.3 for more information.

2.4 Facilitating small customer participation in the WDRM

The Commission considers that further work to facilitate small customer participation in the WDRM should not be prioritised. This is because there are substantial complexities that need to be addressed in order to facilitate small customers in the WDRM which may outweigh the limited benefits of the WDRM to date.

Small customer participation in the wholesale market can be facilitated through the VSR framework, from both customer CER and demand response.

48 ECA, submission to the draft report, p. 2.
49 Enel X, submission to the draft report, p. 2.
50 VIOTAS, submission to the draft report, p. 3.
51 ENGIE, submission to the draft report, p. 3.

This section describes:

- stakeholder feedback on facilitating small customers in the WDRM
- the Commission's reasons why the WDRM should not be extended to include small customers.

2.4.1 Stakeholders continued to support small customer participation in the WDRM

The Commission's draft recommendation was that changes should not be made to facilitate small customer participation in the WDRM. In making this draft recommendation, we noted that small customers' participation in the wholesale market is best facilitated through the mechanisms introduced through the combination of the recent IPRR and CER benefits rule changes.

In submissions to the draft report, several stakeholders continued to advocate for expanding the WDRM to facilitate small customer participation. These submissions highlighted that:

- Residential, small to medium enterprise or C&I customers all operate in the same NEM ecosystem and excluding this segment of the market limits the total size of the benefits that can accrue.[52]
- The AEMC has chosen to exclude small consumers from the WDRM without satisfactorily demonstrating how these consumers are otherwise supported. The AEMC should show the difference between the WDRM, the Voluntary Scheduled Resources (VSR) mechanism, and any other options for demand response by consumers in their final report.[53]
- The NEM review has highlighted the importance of increasing the market visibility of demand-side resources, in light of this the WDRM should be further expanded to small customers.[54] The NEM review outlined that "...each resource should be able to choose the most suitable pathway given its characteristics.". The only way to meet this is if households can also participate in the WDRM.[55]
- The design of the VSR and CER benefits mechanisms is such that they are neither likely to incentivise a broad range of small users and diverse demand-side technologies to participate, nor stimulate a competitive market for aggregation services.[56]
    - Enel X further contended that the responsibility for engaging flexible demand from residential and small-medium enterprise customers should not all fall to the retailer. This is because energy risk management function is often viewed as a profit centre, particularly within the dominant market players. Enel X suggested that VSR and flexible trading arrangements do little to challenge existing retailer engagement with flexible demand resources of smaller customers.

The Justice and Equity Centre (JEC) also raised an alternative settlement model that it considered would better incorporate aggregations of resources as well as small customers, see section 3.2 for more information.[57]

2.4.2 Further work to facilitate small customers in the WDRM is not recommended

The Commission recommends that further work to facilitate small customer participation in the WDRM not be prioritised. There are significant complexities that need to be addressed in order to facilitate small customer participation in the WDRM.

52 EUAA, submission to the draft report, p. 3.
53 ECA, submission to the draft report, p. 4.
54 EEC, submission to the draft report, p. 1.
55 JEC, submission to the draft report, p. 12.
56 Submissions to the draft report; EEC, p. 1. JEC, pp. 11-12. Enel X, p. 3.
57 JEC, submission to the draft report. p. 9.

In the context of the limited benefits of the WDRM when compared to its total implementation costs, the Commission does not consider that these complexities should be further investigated at this time.

This is not to say that small customers should not be active in the electricity market if they wish to, but that the WDRM should not be expanded at this time to achieve this outcome. Small customers may participate in the wholesale market through the VSR framework, either with their CER or demand response. The Commission acknowledges stakeholder submissions that some customers may be suited to a WDRM-type mechanism. However, given the rapid increase in CER, such as through the Cheaper Home Batteries Program, mechanisms to facilitate this response are the highest priority.

Consumer protections for future energy services need to be considered

In the 2020 determination, the Commission was not able to satisfy itself that a rule including small customers would be likely to contribute to the achievement of the national energy retail objective (NERO).[58] This was due to the difficulty in adequately addressing the application of energy-specific consumer protections to arrangements between small customers and DRSPs under these rule change requests. A holistic review would be required, which may conclude that changes to the NERL are necessary.

Energy Ministers recently agreed to the Better Energy Customer Experiences (BECE) work to review energy consumer protection frameworks, ensuring they are strong and fit for purpose both now and into the future.[59] This review will explore and consider existing, emerging and future issues related to consumers' access to energy, including new energy services.[60]

The Commission considers that findings from the BECE review, and possible changes to the NECF, would need to be completed before small customer inclusion in the WDRM could be reconsidered.

There are significant complexities and suitability challenges to incorporate small customers in the WDRM

The Commission's draft report highlighted the 2020 rule determination, concluding that small customers are not suited to the WDRM as:[61]

- behavioural demand response, which can be used for small customers, is not suited to being scheduled
- centrally determined baselines have not been demonstrated to work well for small customers
- there is a risk that relying on centrally determined baselines for small customers will lead to distortionary behaviour
- there would likely be significant additional costs and complexity associated.

The Commission acknowledges stakeholder submissions that some small customers may be suited to participating in the WDRM. However, on the whole, the Commission remains of the view that the WDRM may be difficult to apply to small customers. As previously acknowledged by stakeholders, batteries, pool pumps, hot water heating, and smart electric vehicle charging have more certainty than uncontrollable loads.

58 AEMC, *Wholesale demand response mechanism*, rule determination, 11 June 2020 p. 8.
59 Further information on the BECE review can be found on the project page here.
60 Energy and climate change ministerial council, Consultation Paper – Better Energy Customer Experiences, p. 6.
61 AEMC, *Wholesale demand response mechanism*, rule determination, 11 June 2020, pp. 74-86.

However, because these loads can be easily adjusted to consume at different times of day, they are difficult to accurately baseline for the purposes of the WDRM. Additionally, because they are more certain in their response, they could also participate as part of a VSR, potentially as a standalone resource behind a secondary settlement point.

Aggregating small customer loads reduces this inherent variability and makes the aggregate load easier to predict, similar to how demand forecasting is currently done in the NEM. However, the settlement model for the WDRM relies on baselines being determined at individual NMIs. As noted in section 3.2, the Commission does not consider that this approach should be developed further.

There are significant costs involved to incorporate small customers in the WDRM

The 2020 final determination noted that facilitating small customers would require significant implementation costs for the AEMO and retailers.[62] This is because if AEMO and retailer systems are required to account for a greater number of customers, the complexity and costs of those systems to operate the WDRM would significantly increase.

We have not attempted to quantify this risk or contrast it against the benefits of the increased participation from small customers. The Commission considers that the complexity, risks and cost of incorporating small customers in the WDRM in light of the small benefits to date, does not justify increased expenditure and consideration of small customer participation in the WDRM.

The recent two-sided market reforms facilitate small customer participation

The recent two-sided market reforms provide an opportunity for facilitating small customers in the wholesale market. The CER benefits and IPRR rule changes have progressed two-sided market arrangements and provided a flexible and robust participation pathway for small customers.

There has been significant growth in CER, particularly following the introduction of the Australian Government's Cheaper Home Batteries Program, which has brought in over 50,000 installations providing over 900 MWh of energy storage.[63]

These household batteries are highly forecastable and controllable, which makes them suited to participate under the VSR framework, should they opt-in and see value in doing so. As mentioned in section 1.2, VPP resources such as these batteries can be aggregated together to compete with large-scale generators and storage and enabling the NEM to become a more inclusive two-way market.

The WDRM suits a particular subset of resources, as mentioned in section 1.2.2. Were the Commission to reopen the assessment of facilitating small customers in the WDRM, we would likely consider the application of multiple FRMPs at a small customer premise more broadly. This was outlined in the CER benefits final determination, where the Commission noted it was "open to a rule change request on this option once other reforms have progressed.".[64]

62 AEMC, *Wholesale demand response mechanism*, rule determination, 11 June 2020, p. 84

63 As announced by the Hon Chris Bowen MP on 6 September 2025, see here.

64 AEMC, *Unlocking CER benefits through flexible trading*, rule determination, 15 August 2024, p. v.

3 The WDRM should maintain its current design

The Commission recommends no further work be progressed to investigate additional changes to the design of the WDRM at this time.

The consultation paper and stakeholder submissions identified several potential changes to the WDRM's design that could increase participation in, and the effectiveness of, the WDRM. The Commission's draft recommendation was that making changes to the WDRM at this time would not deliver material net benefits.

The Commission has considered stakeholders' additional views on these topics in response to the draft report and carried out its own analysis. In light of no new information being received on these issues, it has concluded these issues do not give rise to necessary changes to the WDRM. This chapter discusses each of the potential changes in turn:

- expanding the WDRM to facilitate a two-way response (section 3.1)
- allowing portfolios of resources to be baselined and participate in the WDRM (section 3.2)
- AEMO's baseline development and DNSP endorsement processes (section 3.3)
- changing the methodology of the WDRRR (section 3.4)
- facilitate network voltage management in the WDRM (section 3.5)
- changing the FCAS cost recovery arrangements for DRSPs. (Section 3.6)

3.1 Expanding the WDRM to facilitate two-way demand response

The Commission does not recommend further work be progressed to expand the WDRM to include a two-way response. This recommendation is the same as the draft recommendation.

In response to the consultation paper Energy Consumers Australia (ECA) and JEC suggested the WDRM could be used for 'two-way' demand response, which would encourage customers to consume more during negative prices, and could help to mitigate minimum system load (MSL) events.[65]

The draft recommendation reflected that, using the existing settlement process, the negative wholesale prices would need to offset the customers' increased retail charges. Our analysis showed that, over the past three and a half years, negative price outcomes were not sufficiently negative to offset the additional retail costs and encourage loads to consume more than their baseline amount. Having regard to this analysis, the Commission did not recommend this change being progressed further.

3.1.1 Stakeholders advocated for expanding the WDRM to facilitate a two-way response

Some stakeholders continued to seek the WDRM being expanded to include a two-way demand response. They suggested that the AEMC's previous analysis in the draft report should have considered:

- That negative price events are increasing in frequency and generally increasing in frequency as renewables penetration growth continues, and this trend should be factored in.[66]

65 Submissions to the consultation paper, ECA, p. 7. JEC, p. 20.

66 Submissions to the draft report; JEC, pp. 15-16. ECA, pp. 3-4. EUAA, p. 3.

- There are other values in incentivising increases in demand during negative prices, such as emissions benefits by incentivising more demand when generation is predominately solar, reducing curtailment.[67]
- That some customers will have lower retail prices than the average quoted in the AEMC's draft report and would be incentivised to increase demand.[68]

In contrast to this Enel X agreed with our analysis that spot prices may not incentive response.[69] AEMO also noted that over the last two financial years, on average, the prevailing spot price during MSL events has not been sufficiently negative to offset the increased retail costs for consumers to consume more.[70]

AEMO also outlined that expanding the WDRM to facilitate a two-way response could require substantial changes to AEMO's dispatch, settlement, metering and baselining systems. Such as:[71]

- Treating WDRUs as bidirectional units (BDUs), which would introduce numerous system changes and complexities that would need to be addressed to appropriately include these units in AEMO's systems and processes, including in the NEM Dispatch Engine (NEMDE).
- Changes to the baseline methodologies may be required, such as dual baselining if the WDRU may wish to increase load during the middle of the day and decrease load in the evening peak.
- Uncertainty around how a DRSP would define the corresponding maximum response component (MRC) for the unit's ability to increase demand.

3.1.2 The WDRM should not be expanded to include a two-way response

The Commission does not recommend that further work to expand the WDRM to include two-way demand response be progressed.

We understand stakeholders' arguments that instances of negative prices are increasing, and will likely increase with the proportion of renewable generation in the NEM. The Commission acknowledges that the occurrence of negative prices may increase in the future; however, it expects that most negative pricing outcomes will be in the range of $0 to -$100.[72] Prices in this range are not sufficiently negative to support a two-way demand response arrangement. These pricing dynamics reflect generator bidding dynamics where they are paid a supplementary revenue stream outside the wholesale market, and bid in capacity at or above the inverse of this revenue stream.

In addition, the occurrence of prices below -$200/MWh may continue to occur infrequently, likely as a result of bidding to manage dispatch as a result of network congestion.[73] Based on this, it is still unlikely that there would be enough periods of sufficiently negative prices to offset the additional retail costs and encourage loads to consume more than their baseline amount on average.

Furthermore, the difference in magnitude between negative prices and positive prices means that responses to high prices have a greater upside potential than responses to negative prices. For instance, a 10MW WDR response to a $20,300/MWh price represents a payment of approximately

67 Submissions to the draft report; ECA, p. 3. JEC, pp. 15-16.

68 JEC, submission to the draft report, p. 15. JEC also outlined that the Commission should have excluded network use of service charges (NUOS) from our assessment. After further conversations with JEC, we understand that we were correct to include NUOS charges in our assessment.

69 Enel X, submission to the draft report, p. 3.

70 AEMO, submission to the draft report, p. 4.

71 AEMO, submission to the draft report, pp. 4-5.

72 Over the past three years 97% of negative pricing outcomes have been between $0 to -$100.

73 See AEMC, Transmission access reform, Final report: Volume 3 - Access and pricing in the NEM, September 2024, pp.7-8 for more infomation on bidding dynamics during congestion.

$85,000. Whereas a 10MW two-way response to a -$1000/MWh price results in a payment of approximately $3,300.[74]

In addition to the Commission's analysis on negative prices above, we consider that:

- Some customers may be on retail contracts that would incentivise increases in load at current prices, but on average, most would not. This reduces the likelihood that the mechanism would be utilised if the change were made.
- There is little information on the amount of available resources that have the capacity to significantly increase load.
- There are material technical complexities, as outlined in AEMO's submission above, that would need to be overcome to implement this change.

Based on this analysis, the Commission considers that further work to include a two-way response in the WDRM be progressed.

3.2 Applying baselines to portfolios of resources

The Commission does not recommend further work to expand the WDRM to include portfolio-level baselines, given its potential implementation complexity and costs. This recommendation is the same as the draft recommendation.

The Commission's draft recommendation reflected that a portfolio-level approach would require creating a methodology for apportioning the portfolios' baseline to each NMI such that the relevant FRMP can fund the WDR dispatch. Establishing such a methodology would be complex, contentious and potentially costly.

3.2.1 The EEC and JEC support baselines across a portfolio

The EEC and JEC reiterated their views from previous submissions that the WDRM should facilitate baselines across a portfolio of resources.[75]

The EEC reiterated that the settlement model for the WDRM (individual NMI) is not fit for purpose and should be changed.[76] The Energy Efficiency Council (EEC) noted that doing so should stimulate much more participation, aligning Australia with international best practice for demand flexibility.

JEC suggested an alternative baselining and settlement approach for the WDRM to address the issues related to NMI-specific baselining and settlement. Broadly, JEC's suggested:[77]

- when dispatched by AEMO an aggregator would trigger a demand response at multiple NMIs
- the meter data from the participating NMIs would be used to determine a baseline for settlement with AEMO
- AEMO settles with the aggregator based on their dispatched demand response, measured as the difference between the aggregated baseline amount and actual consumption
- the aggregator would pay the individual customers based on separate arrangements it has with them
- the customer at each NMI would pay their retailer based on their actual consumption.

74 This assumes customer retail costs of $200/MWh.
75 Submissions to the draft report; EEC, p. 1. JEC, pp. 8-10.
76 EEC, submission to the draft report, p. 1.
77 JEC, submission to the draft report, p. 9.

JEC also suggested this approach could be used to facilitate small customer participation. Several aspects of this approach are similar to the current WDRM design, except for the baselining process in step two. JEC notes that its alternative approach creates a missing money issue, which the current WDRM design avoids through its split settlement and retail compensation arrangement.

JEC does not address this issue directly. Instead, commenting that identifying a solution to address this issue should be very possible. JEC also stated that it has offered solutions to this problem in previous submissions to the AEMC, which have not been referred to or responded to meaningfully.

3.2.2 The WDRM should not be extended to portfolio-level baselines

The Commission recommends that the WDRM not be expanded to portfolio-level baselines.

This is because facilitating portfolio-level baselines in the WDRM would face significant complexities and costs. The alternative baseline and settlement proposal from JEC requires significant work to solve the missing money problem and is not a feasible solution in its current form. JEC's solution would still require a methodology or process to recover the baseline amount of consumption to fund the WDR dispatch. Consistent with the Commission's view in the draft report, creating such a methodology would be complex, contentious and potentially costly.[78]

The Commission acknowledges stakeholder comments that the behaviour of a portfolio of resources is typically easier to forecast than an individual site, as is the case with demand forecasting currently. However, significant complexities outlined in the draft report still need to be overcome to utilise this approach for the WDRM, and it is uncertain how much participation this would unlock.

In light of these complexities, WDRM's implementation costs and its benefits to date, the Commission maintains that further work to facilitate portfolio baselines for the WDRM should not be progressed. However, a significant change in circumstances may warrant reconsidering this issue.

The Commission's consideration of small customer participation in the WDRM is outlined in section 2.4.

3.3 Baseline development and DNSP endorsement

In response to the consultation paper, stakeholders suggested changes to the baseline development process and highlighted issues with the DNSP endorsement process.[79] The Commission considered that the issues raised in submissions are best addressed through this consultation process with AEMO, as:

- the DNSP endorsement process is a requirement under AEMO's guidelines and is best consulted on with AEMO
- low-load exclusion days can be considered through the existing baseline development process
- AEMO has self-imposed timeframes in their guidelines, and concerns on timing can first be addressed with AEMO before a rules solution is considered.

78 AEMC, Review of the Wholesale Demand Response Mechanism, Draft report, 10 July 2025, pp. 16-17.

79 AEMC, Review of the WDRM, Draft Report, p. 2.

3.3.1 Stakeholders were supportive of the draft recommendation

Stakeholders broadly supported the Commission's draft recommendation, with both registered DRSPs looking forward to engaging with AEMO to progress the baseline development and DNSP endorsement issues.[80]

Reposit Energy requested that when assessing the Expanding eligibility under the WDRM rule change request, the AEMC also considers the issue of flexible baseline methodologies as part of the technical solution.[81]

Separately, the Energy Users Association of Australia (EUAA) highlighted that some of its members were not able to participate due to the existing baseline process. The EUAA suggested the AEMC work with AEMO to simplify baseline calculations so that all consumers can either participate in WDRM or make a decision more easily about which mechanism to use.[82]

3.3.2 Baseline development and DNSP endorsement processes are being considered by AEMO

The Commission maintains that the baseline development and DNSP endorsement issues are best addressed through existing consultation processes with AEMO. Baseline development and DNSP endorsement processes are contained within AEMO guidelines, and AEMO has already committed to reviewing them.[83]

We encourage Reposit continues engaging in the *Expanding eligibility under the WDRM* rule change process, so the Commission may consider these points regarding flexible baseline methodologies.

In response to EUAA's submission, the WDRM final rule recognises that baseline methodologies are not a 'one-size-fits-all'. To address this, participants are able to request new baseline methodologies to AEMO as outlined in AEMO's WDR guidelines.[84]

3.4 Determining the retailer reimbursement rate

The Commission's draft recommendation was to maintain the current methodology for calculating the wholesale demand response reimbursement rate (WDRRR). We accepted that changes could be made to increase its accuracy; however, the complexity and limitations of the alternative methodologies did not justify a change from the current methodology.

The WDRRR is currently calculated as the peak period load weighted average spot price over the 12-month period ending immediately before the start of the quarter.[85] The WDRRR allows the retailer for the WDRU to cover its costs of hedging for the customer's baseline level of consumption in the wholesale market. To appropriately compensate the retailer, the WDRRR aims to reflect the wholesale cost component of an average large customer's retail tariff.

3.4.1 Stakeholders reiterated that the WDRRR does not reflect retailer contracting

The EUAA and Red Energy stated that the current WDRRR calculation methodology raises retailers' financial exposure,[86] suggesting that the current 12-month rolling average of peak demand prices method does not accurately reflect peak forward prices used by retailers. However, they did not

80 Submissions to the draft report; Enel X, pp. 3-4. VIOTAS, p. 5.
81 Reposit Energy, submission to the draft report, pp. 2-3.
82 EUAA, submission to the draft report, p. 4.
83 AEMO, submission to the draft report, p. 2.
84 See clause 3.10.1(a)(4) of the NER.
85 Clause 3.15.6B(g) of the NER.
86 Submissions to the Draft Report, EUAA, p. 4. Red Energy, p. 2.

outline an alternative approach or respond to the previous approaches considered by the Commission.

In contrast, Enel X agreed that the current methodology was an appropriate approximation of the wholesale cost component of the average retail tariff.[87] Enel X suggested greater market benefits are likely found through expanding the volume of qualifying WDRM resources.

3.4.2 The WDRRR methodology remains appropriate

The Commission maintains that the current WDRRR methodology is appropriate and should remain in place.

The Commission previously considered alternative methodologies, including using forward prices in setting the WDRRR, as suggested by stakeholders above. In assessing these alternative methodologies in 2020 the Commission considered that, among other factors, contract market liquidity issues in South Australia present challenges for methodologies that utilise forward contract prices.[88] Submissions to this current process did not meaningfully address these issues and so these issues remain unresolved.

While changes to the WDRRR could marginally improve its accuracy, the complexity and limitations of the alternative methodologies considered when drafting the 2020 final rule do not justify a change.

3.5 Participating in the WDRM using network voltage management

The Commission's draft recommendation was not to include network voltage management in the WDRM, as requested by Endeavour Energy in its submission to the consultation paper.

The EUAA was the only stakeholder who responded. It agreed that the WDRM is not an appropriate mechanism to manage voltage control.[89]

3.5.1 The WDRM should not be expanded to include network voltage management

The Commission maintains that the WDRM should not be expanded to include network voltage management due to potential implementation complexity and costs. Our initial analysis in the draft report remains valid, and several complexities would need to be addressed to enable its successful application to the WDRM. These include:

- how the baseline amount would be proportioned to retailers downstream of the network area registered as participating in the WDRM
- the systems and procedures needed to ensure that there are no cross-connections to other areas of the relevant distribution network or a connected network

Please see section 3.3.2 of the draft report for further details on the Commission's previous analysis.

3.6 Extending FCAS cost recovery to DRSPs

The Commission's draft recommendation was that DRSPs should remain excluded from regulation and contingency FCAS costs.

87 Enel X, submission to the Draft Report, p. 3.
88 AEMC, *Wholesale demand response mechanism*, rule determination, 11 June 2020, pp. 209-210.
89 EUAA, submission to the draft report, p. 4.

This reflected stakeholder views and our assessment that including DRSPs in these processes would bring costs and complexities in excess of their benefits.

No stakeholders commented on this draft recommendation.

3.6.1 DRSPs should continue to be excluded from FCAS cost recovery

The Commission maintains that DRSPs should remain excluded from regulation and contingency FCAS costs.

The Commission considers that the draft report analysis is still valid and DRSPs should continue to be excluded from contingency FCAS costs, due to the following reasons:

- WDRU operation is unlikely to result in a low frequency contingency event and hence triggering the need to use contingency raise FCAS. As such, these costs should not be recovered from these loads.
- Consumers comprising a WDRU already indirectly pay for contingency FCAS costs through their retailer. Therefore, having DRSPs pay for contingency FCAS costs could result in an over-allocation of FCAS contingency costs.

In addition, DRSPs should be excluded from regulation FCAS cost recovery processes. This is because the method for determining contribution factors for regulation FCAS is not workable for WDRUs. As such, significant changes would need to be made to the causer pay process to factor in DRSPs, with this cost likely outweighing the associated benefits.[90]

90 Please see section 3.4.2 of the draft report for further details on the Commission's previous analysis.

4 Our recommendations contribute to the energy objectives

In conducting reviews, the Commission must have regard to the relevant energy objectives.[91] For this review, the relevant energy objective is the national electricity objective (NEO) which is:[92]

> to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to—
>
> (a) price, quality, safety, reliability and security of supply of electricity; and
>
> (b) the reliability, safety and security of the national electricity system; and
>
> (c) the achievement of targets set by a participating jurisdiction—
>
> (i) for reducing Australia's greenhouse gas emissions; or
>
> (ii) that are likely to contribute to reducing Australia's greenhouse gas emissions.

The targets statement, available on the AEMC website, lists the emissions reduction targets to be considered, as a minimum, in having regard to the NEO.[93]

4.1 The recommendations are consistent with the NEO

The Commission used an assessment framework to guide making its draft recommendations and that they promote the long term interests of consumers.

The following criteria, as described in section 4.2.2 of the consultation paper, were relevant:

- principles of market efficiency
- outcomes for consumers
- implementation considerations
- principles of good regulatory practice.

The Commission did not receive any stakeholder feedback on our assessment framework in response to the draft report.[94]

4.1.1 The WDRM has resulted in more efficient dispatch outcomes

Our recommendations recognise that the WDRM has resulted in more efficient dispatch outcomes.

A central aim of the WDRM is to provide appropriate incentives to facilitate demand response within central dispatch to maintain productive and allocation efficiency. We have assessed the WDRMs against their impact on efficient market outcomes and competition benefits, outlined in detail below.

Efficiency

The WDRM has avoided dispatching more expensive generation when the supply-demand balance is tight, leading to efficient clearing of the spot market. We have estimated that the WDRM has

91 Section 32 of the NEL.
92 Section 7 of the NEL.
93 Section 32A(5) of the NEL.
94 See section 4.1 of the draft report for previous stakeholder feedback on the assessment framework.

resulted in $5.39 million in dispatch cost efficiencies.[95] Recommending continuing the operation of the WDRM should lead to the least-cost combination of resources to meet demand over the long term. This should result in reduced costs that are recovered from all consumers.

Wholesale demand response has also reduced spot prices by $265.6 million, reducing the total costs of supplying consumers' demand for electricity. These benefits, while small in the context of the NEM, have put downward pressure on wholesale prices, with average price savings of $28/MWh during WDR dispatch. In our draft report, we characterised these benefits as wealth transfers from generators to consumers and, as such, did not include them in direct assessment of the benefits and operational costs of the WDRM.

JEC and the ECA objected to the Commission's treatment of these wealth transfers. The ECA requested that the final report make it clear that the wealth transfers benefit consumers and that excluding them fundamentally misrepresents the WDRM's value to consumers.[96]

JEC's submission argued that:[97]

- Characterising savings from lower wholesale prices as a wealth transfer from generators to consumers is an inappropriate use of the concept of wealth transfer.
    - JEC contended that the concept of a wealth transfer is useful to identify the movement of value between parties on the same side of the market, such as generators and demand response providers.
- Placing generator and consumer interests as equal is contrary to the NEO and the Commission's imperative to make decisions maximising the long-term consumer interests.

JEC outlined that excluding the price effects of demand response artificially and inappropriately reduces the benefits to consumers by around 98 per cent, undervaluing the scheme and the consumer benefit that it provides per dollar of investment.

To clarify, the Commission has undertaken the analysis for this review based on the standard measure of economic efficiency from welfare economics; that is, the combined benefit to consumers and producers. This combined benefit is referred to as total surplus, or social welfare. Lower prices do not increase social welfare, but represent a transfer from producers to consumers. This treatment is consistent with previous Commission analysis, such as that used for the *Integrating price price-responsive resources into the NEM* rule change.

The Commission does consider wealth transfers as part of our overall assessment. However, as outlined above, we do not directly consider them when assessing the direct benefits and costs of reforms.

Competition

The WDRM, by nature of its existence, promotes increased consumer choice for demand response offers by allowing a specialist third-party to monetise their capability. While difficult to clearly observe, this competition effect may have promoted retailers to offer more contracts with demand-responsive aspects.

While retailers are increasingly offering contracts with demand response components, the impact of the WDRM in driving these offers is uncertain. Nevertheless, the WDRM may have helped to improve competition and provide an alternative pathway for some customers to participate in the wholesale market.

95 See section 2.1.2 for further information.
96 ECA submission to the draft report, p. 1.
97 JEC, submission to the draft report, pp. 13-14.

4.1.2 Our recommendations promote better outcomes for consumers

Our recommendation that the WDRM continue operating recognises that it provides price signals, incentives and opportunities for consumers to invest in responsive loads and use these assets in the wholesale market.

The WDRM focuses on large customers who do not have an incentive under their current retail arrangements to respond to market signals. Recommending that the WDRM continue allows these customers' demand responsiveness to be used in the market, where they would not have been utilised in the absence of the mechanism. This results in consumers being rewarded for their flexibility, and the market benefits from more efficient price-setting.

4.1.3 We have considered the costs of implementing changes to the WDRM

In making our recommendations, we have closely considered the costs of implementing changes to the WDRM framework. Given the WDRM's limited benefits to date, the Commission has considered targeted changes that do not involve significant expenditure or complexity, which have the potential to significantly improve participation.

The recommendation to initiate the *Expanding eligibility under the WDRM* rule change reflects this. If made, this rule change could allow new participation without material changes to the WDRM design which would impact implementation costs. On this basis, the Commission intends to assess this request through the rule change process to determine the materiality of these benefits and compare them against the potential costs.

This recommendation is not the Commission's endorsement of the proposal, but rather it acknowledges that the request raises issues and a potential solution that should be explored through a rule change process.

The consultation paper and stakeholder submissions also identified several potential changes to the WDRM's design that could increase participation and effectiveness. Chapter 3 outlines stakeholder views and the Commission's analysis and conclusion that, based on current information about the potential costs, benefits and complexity, these further changes to the WDRM are not warranted at this time.

In making our recommendation to retain the WDRM, we have also considered the potential costs and complexity of removing the mechanism. Removing the WDRM would involve expenditure from AEMO, retailers and DRSPs to remove systems and processes that facilitate the WDRM's operation. Consideration would also need to be given to the WDR capacity awarded through the NSW LTESA contracts, NSW peak demand reduction scheme (PDRS) contracts awarded to WDRM or any out-of-market contracts that may underpin WDR participation.

Based on the net operational benefits the WDRM is providing, the Commission has not sought to quantify these costs. However, our recommendation that the WDRM should continue takes into account its current benefits, as well as the potential costs and complexity involved with removing it.

4.1.4 Continuing the WDRM promotes certainty in the regulatory framework

Our recommendations promote certainty for participants by clarifying that the WDRM will continue and be part of the NEM framework.

VIOTAS outlined that removing uncertainty around the future of the WDRM will encourage investment and participation.[98] That is, the Commission's 2020 final determination working that the WDRM is a temporary mechanism may have disincentivised consumers and DRSPs from undertaking the necessary investment of time and money to partake in the scheme.

Recommending that the WDRM continue operation ensures participants can make investments with certainty in the regulatory framework. The Commission recognises that a mechanism can and should be amended or even removed if it is not delivering benefits for consumers or the market. However, the WDRM is providing benefits in excess of its operating costs and plays an important role in facilitating a pathway for wholesale market participation from a group of large loads. Based on these factors, the Commission recommends that the WDRM continue operating.

98 VIOTAS, Submission to the draft report, p. 2.

Abbreviations and defined terms

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
BDU	Bi-directional Unit
CER	Consumer Energy Resources
Commission	See AEMC
DNSP	Distribution Network Service Provider
DRSP	Demand Response Service Provider
DSP	Demand-side Participation
EEC	Energy Efficiency Council
EV	Electric Vehicle
FCAS	Frequency Control and Ancillary Service
FRMP	Financially Responsible Market Participant
IES	Intelligent Energy Systems
IPRR	Integrating price-responsive resources into the NEM
JEC	The Justice and Equity Centre
LTESA	Long-term Energy Service Agreement
MSL	Minimum System Load
NECF	National Energy Customer Framework
NEM	National Electricity Market
NER	National Electricity Rules
NERO	National Energy Retail Objective
NMI	National Meter Identifier
PDRS	Peak Demand Reduction Scheme
PJM	Pennsylvania-New Jersey-Maryland Interconnection
RERT	Reliability and Emergency Reserve Trader
VPP	Virtual Power Plant
VSR	Voluntarily scheduled resource
WDR	Wholesale Demand Response
WDRM	Wholesale Demand Response Mechanism
WDRRR	Wholesale Demand Response Reimbursement Rate
WDRU	Wholesale Demand Response Unit